

picturemaxx[™] AG

Case Study

NexentaStor[™] Delivers a Higher Performance Storage System

Munich, Germany
www.picturemaxx.com
Media and Entertainment



Summary

Challenge: Increasing media usage led to capacity issues and declining performance

Solution: NexentaStor High Availability (HA) Cluster

Platform: HGST, CloudStack, Supermicro

Use Case: High-performance Storage

Benefits:

- High performance, support
- Low latency
- High availability
- Energy savings
- No vendor lock-in

Business Overview

Munich-based picturemaxx[™] AG develops and licenses media asset management solutions and enterprise content management modules for marketing communication, information management, and the professional media market.

The company's high-end search engine *my-picturemaxx* aggregates the portfolios of several hundred photo agencies, media portals, and archives from all over the world and can provide more than one billion saved media assets.

At peak times, single events like the Academy Awards, the Olympics, or Fashion Week trigger the upload of up to 150,000 pictures, each one between 1-5 MBs. Each picture needs to be processed, scaled, and rendered very quickly before being saved into picturemaxx's media database.

Once a picture is archived in the media database, any picture agency can supply digital media to newspapers, magazines, publishing houses, and corporations around the world. Thus any newsworthy, creative, or historical pictures, videos, and texts are exchanged between the originator and the user.

Challenges

With the company's strong background in software programming and development, picturemaxx previously used a customized Linux-based file storage system, saving all content through basic master-slave replication. However, the system had no high availability, complicating maintenance and scalability.

“Today we process more than 600,000 files each day. This huge amount requires advanced technology on all fronts and storage is a critical success factor for our business. Our market is a tough one and we constantly need to improve our system to make it more efficient and cost effective.”

Christian Marnitz
CIO, picturemaxx

As media usage increased, performance and capacity issues arose. To achieve low latency, picturemaxx had used NFS over Infiniband. Initially this solution achieved low latency, but it created problems: because of limited cable options, servers were located very close to each other. Seeking to replace its existing Linux-based DAS with an advanced system, picturemaxx teamed with long-time partner Exus Technologies. Oliver Flathmann, chief production officer at Exus Technologies, explains: “picturemaxx has very specific needs with an out-of-this-world turnover of data on a daily basis and an absolutely unique system. Reaching high availability was just one factor, albeit the most important one. High performance, high flexibility, and advanced storage features like unlimited snapshots were also essential. After adding in growing capacity needs and the requirement for a fast SSD-cluster, there was only one solution: Nexenta.”

System Configuration

- Three Hybrid arrays with full capacity of over 1PB
 - Supermicro Head Nodes and JBOD
 - NexentaStor High Availability Cluster
 - 180 x 2TB near-line SAS
 - SSD Based Read and Write Cache
- Three All-SSD arrays with full capacity of 12TB
 - Supermicro Head Nodes and JBOD
 - NexentaStor High Availability Cluster
 - 20 x 400GB SSD per array
- Arista Networks software defined networking

Solution and Benefits

Solution

The project was divided into several phases to implement a total of six storage clusters. In the first phase, three clusters based on HDDs were installed as primary storage for all media up- and downloads and picturemaxx' Citrix cloud platform. Each cluster now houses 180 x 2TB near-line SAS drives to give each cluster a capacity of 360TB and a complete capacity of more than 1PB for the HDD installation. The head-nodes' 6GB/s throughput performance is further powered by market-leading SSD and DRAM provider STEC with 8GB ZeusRAM SAS-Buffers.

In the second phase, three all-SSD clusters were installed, serving as a host for picturemaxx's business intelligence storage applications including ERP, CRM, ECommerce, Search-Index, and others.

The all-SSD clusters are optimized for reading data hosts and boast a minimum of latency. The all-SSD head-nodes are also powered by SSD and DRAM from STEC. These ultra-fast and reliable modules offer extremely low latencies, which gives the cluster a very high performance as it reduces the 'I/O wait'. Each cluster initially contains 20 x 400GB SSDs with a full capacity of 12TB of fast Flash storage.

The entire storage system with six clusters now holds more than 1PB. To not hold the storage system back, a new networking partner was chosen too. All clusters are connected multiple times active-active with 10Gbit networking solutions from Arista Networks and Chelsio Communications.

This Software-Defined Storage (SDS) setup proved to be a real winner as latency on all clusters was even lower than with the more expensive Infiniband solution.

Benefits

By adopting Nexenta, picturemaxx was able to implement the right solution for its needs with high performance, low latency, high availability, and no vendor lock-in.

“Going with one of the big vendors was not the right choice for us. Their business models don't serve us well as we need to be able to plan exactly how much we can spend,” says Marnitz. “A very positive factor is also Nexenta's support. We have found a partner that understands how unique our system is and that can offer us more flexible solutions than other vendors with their fixed product roadmaps.”

The new system is also more energy efficient. “With this latest storage upgrade we not only consolidated the existing system but have reached a whole new performance level for picturemaxx,” Flathmann says. “We're also saving energy – enough to pay for the entire system in just a couple of years.”



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